REMARKS

Claims 1-31 are currently pending in the subject application, and are presently under consideration. Claims 1-8, 10-16, and 20-27 stand rejected. Claims 9, 17-19, and 28-31 are objected to as being dependent from a rejected base claim, but would be allowable if rewritten in independent form. Claims 1, 6, and 9 have been amended. Claim 5 has been cancelled. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1, 2, 5-8, 10, 11, 13, 14, 16, and 25-27 Under 35 U.S.C. §102(b)

Claims 1, 2, 5-8, 10, 11, 13, 14, 16, and 25-27 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,400,227 to Goldfarb, et al. ("Goldfarb"). Claims 1 and 6 have been amended. Claim 5 has been cancelled. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended to substantially include the elements of claim 5. Specifically, amended claim 1 recites that the first current source comprises a first set of binary weighted Field Effect Transistors (FETs) coupled to provide the first current, and that the second current source comprises a second set of binary weighted FETs coupled to provide the second current. In the rejection of the claims, the Office Action dated June 6, 2006 (hereinafter "Office Action"), asserts that the FET 13 and the FET 14, as taught by Goldfarb, are a second set of semiconductor devices that generate a second current (Office Action, page 2). The Office Action also asserts that "binary and non-binary weight combinations of FET sizes are anticipated," (Office Action, page 2). Representative for Applicant respectfully disagrees with this assertion. Goldfarb teaches a variable gain amplifier having four branches of FETs having ratios of 1:2:4:4, and that these FETs in the variable gain amplifier can have either binary or non-binary weight combination of FET sizes (Goldfarb, col. 1, line 66 through col. 2. line 3). Thus, as indicated in the above citation from Goldfarb, it is the variable gain amplifier of Goldfarb having the FETs that could be binary weighted (see, *e.g.*, Goldfarb, FIG. 1). Representative for Applicant respectfully submits that Goldfarb provides no teaching that the FETs 13 and 14 are binary

weighted FETs (see, *e.g.*, Goldfarb, FIG. 2; col. 4, line 53 through col. 5, line 10). Therefore, Goldfarb does not anticipate claim 1. Withdrawal of the rejection of claim 1, as well as claims 2-12 which depend therefrom, is respectfully requested.

Claim 6 has been amended to depend from claim 1, and should be allowed for at least the reasons described above regarding claim 1. In addition, claim 6 recites that each FET from the first set of binary weighted FETs is associated with a matching FET having a same relative binary weight from the second set of binary weighted FETs, and wherein each FET of the second set of binary weighted FETs has a width that is K times the width of the matching FET from the first set of FETs, where K is an integer greater than one. The Office Action appears to address the language of claim 6 by stating that "FETs have width which differ according to a predetermined ratio, suitably a 1:2:4:4 ratio," (Office Action, page 2). Representative for Applicant respectfully submits that this is a passage taken from Goldfarb (Goldfarb, col. 1, line 66 through col. 2, line 2) that addresses an aspect of Goldfarb that is unrelated to the language of claim 6. Specifically, assuming *arguendo* that the FETs 13 and 14 can be considered a second current source, the cited section of Goldfarb refers to the FETs in the variable gain amplifier of FIG. 1 only, and not to the FETs in the power amplifier of FIG. 2.

In addition, the number of FETs in the variable gain amplifier of FIG. 1 does not correspond to the number of FETs in the power gain stage of FIG. 2, and the FETs 13 and 14 do not operate in the same manner as those in the variable gain amplifier of FIG. 1. As such, Goldfarb does not teach that the FETs 13 and 14 in the power gain stage are matched with the FETs of the variable gain amplifier. Furthermore, in neither the cited section of Goldfarb, nor anywhere else, does Goldfarb correlate the weights or the widths of the FETs in the variable gain amplifier of FIG. 1 of Goldfarb with those of the FETs 13 and 14 of FIG. 2 of Goldfarb. As such, Goldfarb does not teach that each FET from the first set of binary weighted FETs is associated with a matching FET having a same relative binary weight from the second set of binary weighted FETs, and wherein each FET of the second set of binary weighted FETs has a width that is K times the width of the matching FET from the first set of FETs, where K is an integer greater than one, as recited in claim 6. Therefore, Goldfarb does not anticipate claim 6.

Withdrawal of the rejection of claim 6, as well as claims 7 and 8 which depend therefrom, is respectfully requested.

Claims 7 and 8 depend from claim 6 and should be allowed for at least the reasons described above regarding claim 6. In addition, claim 7 recites that the first set of binary weighted FETs and the second set of binary weighted FETs define a current station, and further comprising a plurality of additional first set of binary weighted FETs and additional second set of binary weighted FETs defining a plurality of current stations. Representative for Applicant respectfully submits that the Office Action does not address the language of claim 7 in the rejection of the claims under 35 U.S.C. §102(b). Representative for Applicant further respectfully submits that Goldfarb does not teach claim 7, and thus does not anticipate claim 7. As such, Goldfarb also does not anticipate claim 8 which is dependent therefrom. Withdrawal of the rejection of claims 7 and 8 is respectfully requested.

Claim 11 depends indirectly from claim 1, and should thus be allowed for at least the reasons described above regarding claim 1. In addition, claim 11 recites that the first current source is associated with a reference voltage and the second current source is associated with a supply voltage of the integrated circuit. Representative for Applicant respectfully submits that the Office Action does not address the language of claim 11 in the rejection of the claims under 35 U.S.C. §102(b). Goldfarb teaches an off-chip voltage source V_{DD2} that supplies power to an output power amplifier that includes the FETs 13 and 14 (Goldfarb, FIG. 2; col. 5, ll. 7-10). Assuming *arguendo* that the FETs 13 and 14 can be considered a second current source, Goldfarb does not teach that the voltage source V_{DD2} is associated with a supply voltage of the integrated circuit that comprises the system, as recited in claim 11. Therefore, Goldfarb does not anticipate claim 11. Withdrawal of the rejection of claim 11 is respectfully requested.

Claim 13 recites a second set of semiconductor devices configured to provide a variable current source that generates a second current based on a second binary selection signal. The Office Action asserts that Goldfarb teaches "a control device that determines the value of the first current and sets the second binary selection signal (binary and non-binary weight combination of FET sizes are anticipated) to provide the second current that is a multiple of the first current,"

(Office Action, page 2). Goldfarb teaches that a current source provides a bias control to the FET 14, and that the gate of the FET 14 is also coupled to the output of the variable gain amplifier (Goldfarb, col. 4, line 61 through col. 5, line 10). Assuming *arguendo* that the FETs 13 and 14 can be considered a second current source, Goldfarb does not teach that it is controlled by a binary selection signal. The current source merely provides a constant bias current for the FET 14, and the output of the variable gain amplifier is an RF signal. Therefore, Goldfarb does not teach a second set of semiconductor devices configured to provide a variable current source that generates a second current based on a second binary selection signal, as recited in claim 13.

Claim 13 also recites that each of the semiconductor devices of the first set of semiconductor devices has an associated matching semiconductor device from the second set of semiconductor devices that has a width that is a multiple of the width of the associated matching semiconductor device from the first set of semiconductor devices. As described above regarding claim 6, Goldfarb does not teach that the FETs in the variable gain amplifier of FIG. 1 are matched and/or have corresponding widths with the FETs 13 and 14 of FIG. 2. Therefore, Goldfarb does not teach that each of the semiconductor devices of the first set of semiconductor devices has an associated matching semiconductor device from the second set of semiconductor devices that has a width that is a multiple of the width of the associated matching semiconductor device from the first set of semiconductor devices, as recited in claim 13. For these reasons, Goldfarb does not anticipate claim 13. Withdrawal of the rejection of claim 13, as well as claims 14-19 which depend therefrom, is respectfully requested.

Claim 14 depends from claim 13 and should be allowed for at least the reasons described above regarding claim 13. In addition, claim 14 recites that the first set of semiconductor devices are coupled to a fixed reference voltage through a precision resistor and the second set of semiconductor devices are coupled to a supply voltage of the integrated circuit. For the reasons described above regarding claim 11, Goldfarb does not anticipate claim 14. Withdrawal of the rejection of claim 14 is respectfully requested.

Claim 16 depends from claim 13 and should be allowed for at least the reasons described above regarding claim 13. In addition, claim 16 recites that the first set of semiconductor

devices comprises a first set of binary weighted FETs coupled to provide the first current and the second set of semiconductor devices comprises a second set of binary weighted FETs coupled to provide the second current. For the reasons described above regarding claim 1, Goldfarb does not anticipate claim 16. Withdrawal of the rejection of claim 16 is respectfully requested.

Claim 25 recites a plurality of current stations distributed over different locations on an integrated circuit, each of the plurality of current stations having a first set of semiconductor devices and a second set of semiconductor devices, each of the semiconductor devices from the first set of semiconductor devices having a matching semiconductor device from the second set of semiconductor devices that has a width that is a multiple K of the width of the corresponding matching semiconductor device of the first set of semiconductor devices. Claim 25 also recites a second select signal associated with selecting a second current to be sourced by the second set of semiconductor devices. Claim 25 further recites a current selector that controls the state of the first select signal and the second select signal, and selects the first current sourced by the first set of semiconductor devices and the second current source by the second set of semiconductor devices. For the reasons described above regarding claims 6, 7, and 13, claim 25 should be patentable over Goldfarb. Thus, Goldfarb does not anticipate claim 25. Withdrawal of the rejection of claim 25, as well as claims 26 and 27 which depend therefrom, is respectfully requested.

Claim 26 depends from claim 25 and should be allowed for at least the reasons described above regarding claim 25. In addition, claim 26 recites that the first set of semiconductor devices comprises a first set of binary weighted FETs coupled to provide the first current and the second set of semiconductor devices comprises a second set of binary weighted FETs coupled to provide the second current. For the reasons described above regarding claim 1, Goldfarb does not anticipate claim 26. Withdrawal of the rejection of claim 26 is respectfully requested.

For the reasons described above, claims 1, 2, 5-8, 10, 11, 13, 14, 16, and 25-27 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

II. **Rejection of Claims 3, 4, 12, 15, and 20-24 Under 35 U.S.C. §103(a)**

Claims 3, 4, 12, 15, and 20-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Goldfarb in view of U.S. Publication No. 2005/0024252 to Ezell ("Ezell"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 3 depends from claim 1. As described above regarding claim 1, Goldfarb does not teach that the FETs 13 and 14 are binary weighted FETs, as recited in claim 1. The addition of Ezell does not cure the deficiencies of Goldfarb to teach or suggest claim 1. Ezell teaches a method for storing a result of a tuning process that includes generating a second characteristic signal using a signal generator (Ezell, Abstract). However, Ezell does not teach or suggest binary weighted FETs. Therefore, neither Goldfarb nor Ezell, individually or in combination, teach or suggest claim 1 from which claim 3 depends. Withdrawal of the rejection of claim 3, as well as claim 4 which depends therefrom, is respectfully requested.

Claim 12 depends from claim 1 and should thus be allowed for at least the reasons described above regarding claim 3. In addition, claim 12 recites a charge rationing system that employs the second current to calibrate the charge rationing system by measuring the difference with the second current source in an "OFF" state and the second current source in an "ON" state. Representative for Applicant respectfully submits that the Office Action does not address the language of claim 12 in the rejection of the claims under 35 U.S.C. §103(a). The Office Action merely asserts that Ezell teaches "means for compensating for differences in voltages associated with the first and the second current source," (Office Action, page 3; citing Ezell, FIG. 2 and FIG. 4). Representative for Applicant further respectfully submits that neither Goldfarb nor Ezell teaches or suggests claim 12. Withdrawal of the rejection of claim 12 is respectfully requested.

Claim 20 recites means for compensating for differences in voltages associated with powering the means for generating a first current and the means for generating a second current. The Office Action states that Goldfarb does not disclose "means for compensating for differences in voltages associated with the first and the second current source," but relies on Ezell to teach this element, stating that "use of such feature is well known in the art," (Office

Action, page 3; citing Ezell, FIG. 2 and FIG. 4). Representative for Applicant respectfully disagrees. Ezell teaches a ramp generator having a reference voltage source and a reference resistor that generates a reference current (Ezell, paragraph 24). A current source generates a charging current having a value that is a multiple of the reference current (Ezell, paragraph 24). Ezell is silent, however, as to a voltage that is associated with powering the second current source, and thus does not describe any compensation to such a voltage. Furthermore, Ezell teaches adding a trim value to a current source to compensate for differences in output voltages of the current sources. Thus, the system of Ezell compensates for differences in output voltages, and not voltages associated with powering the first and second current sources. As such, Ezell does not teach or suggest means for compensating for differences in voltages associated with powering the means for generating a first current and the means for generating a second current, as recited in claim 20.

In addition, Representative for Applicant respectfully submits that there is no motivation for one of ordinary skill in the art to combine Goldfarb and Ezell to achieve the system of claim 20. The Office Action asserts that the motivation for doing so is for the "purpose of achieving very accurate power," (Office Action, page 3). Representative for Applicant respectfully disagrees. Goldfarb teaches that the network 202 in FIG. 2 is a power gain stage that follows the variable gain amplifier (Goldfarb, col. 4, ll. 61-63). As described above, Goldfarb teaches an off-chip voltage source V_{DD2} that supplies power to the output power stage that includes the FETs 13 and 14 (Goldfarb, FIG. 2; col. 5, ll. 7-10).

Assuming *arguendo* that the FETs 13 and 14 are a second current source, Representative for Applicant respectfully submits that there is no teaching or suggestion in Goldfarb that indicates a relationship between the voltage source that powers the variable gain amplifier and the voltage source V_{DD2}. As such, the teachings of Goldfarb appear to be unconcerned with power compensation between the voltage source for the variable gain amplifier and the voltage source V_{DD2} for the power gain stage. This is especially true since the voltage source V_{DD2} of Goldfarb is an off-chip power supply, and would thus create additional and undesirable complexity in providing voltage compensation. In addition, the network 202 in FIG. 2 of

Goldfarb functions as a power gain stage for the RF signal output from the variable gain amplifier (Goldfarb, col. 4, ll. 61-65). As such, compensating for differences in voltage between the power supply of the variable gain amplifier and the voltage source V_{DD2} for the power gain stage would be detrimental to the purpose of applying the gain to the RF signal output from the variable gain amplifier. Furthermore, the assertion that including voltage compensation in Goldfarb, as taught by Ezell, would achieve very accurate power is provided by the Office Action without any support for how this purpose would be achieved based on compensating for differences in voltage between the power supply of the variable gain amplifier and the voltage source V_{DD2} for the power gain stage in Goldfarb, such that the output power supply could be more accurate based on the input power supply.

For all of these reasons, there is no motivation for one of ordinary skill in the art to combine the teachings of Goldfarb with the teachings of Ezell to achieve the invention of claim 20. Therefore, neither Goldfarb nor Ezell, individually or in combination teach or suggest claim 20. Withdrawal of the rejection of claim 20, as well as claim 21 which depends therefrom, is respectfully requested.

Claim 21 depends from claim 20 and should thus be allowed for at least the reasons described above regarding claim 20. In addition, claim 21 recites that the means for selectively adjusting the first current to achieve a desired first current comprises means for measuring a voltage across a precision resistor coupled to a fixed reference voltage and the means for generating a first current, and means for evaluating the first current based on the measured voltage and resistance of the precision resistor. As described above, Ezell teaches a ramp generator having a reference voltage source and a reference resistor that generates a reference current, such that a current source generates a charging current having a value that is a multiple of the reference current (Ezell, paragraph 24). However, Ezell does not teach or suggest that the reference current is adjusted to achieve a desired result based on the measured current through the reference resistor. Goldfarb, likewise, provides no teaching or suggestion of adjusting a current based on a measured amount of the same current across a resistor. As such, neither

Goldfarb nor Ezell, individually or in combination, teach or suggest claim 21. Withdrawal of the rejection of claim 21 is respectfully requested.

Claim 22 recites selectively adjusting the first current and determining the value of the first current until a desired first current is achieved. For the reasons described above regarding claim 21, neither Goldfarb nor Ezell, individually or in combination, teach or suggest claim 22. Withdrawal of the rejection of claim 22, as well as claims 23 and 24 which depend therefrom, is respectfully requested.

Claim 23 depends from claim 22 and should thus be allowed for at least the reasons described above regarding claim 22. In addition, claim 23 recites that the generating a first current comprises selecting at least one FET of a first set of binary weighted FETs, and the generating a second current comprising selecting at least one matching FET from a second set of binary weighted FETs, the at least one FET of the first set of binary weighted FETs and the at least one matching FET from the second set of binary weighted FETs having a substantially similar binary weighting. As described above regarding claims 1 and 6, Goldfarb does not teach or suggest that the FETs 13 and 14 are binary weighted, and further does not teach or suggest that the FETs 13 and 14 are matched with the FETs in the variable gain amplifier of FIG. 1. The addition of Ezell does not cure the deficiencies of Goldfarb to teach this element of claim 23. Therefore, neither Goldfarb nor Ezell teach or suggest claim 23. Withdrawal of the rejection of claim 23, as well as claim 24 which depends therefrom, is respectfully requested.

Claim 24 depends from claim 23 and should thus be allowed for at least the reasons described above regarding claim 23. In addition, claim 24 recites determining an actual second current by compensating for a difference in drain voltage associated with the first set of binary weighted FETs and the second set of binary weighted FETs. For the reasons described above regarding claim 20, neither Goldfarb nor Ezell, individually or in combination, teach or suggest claim 24. Withdrawal of the rejection of claim 24 is respectfully requested.

For the reasons described above, claims 3, 4, 12, 15, and 20-24 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 104.

No additional fees should be due for this response. In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 08-2025.

Respectfully submitted,

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